

The Need for X-ray Spectroscopy

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For over four decades, X-ray, EUV, and UV spectral observations have been used to measure physical properties of the solar atmosphere. During this time, there has been substantial improvement in the spectral, spatial, and temporal resolution of the observations for the EUV and UV wavelength ranges. At wavelengths below 100 Angstroms, however, observations of the solar corona with simultaneous spatial and spectral resolution are limited, and not since the late 1970's have spatially resolved solar X-ray spectra been measured. The soft-X-ray wavelength range is dominated by emission lines formed at high temperatures and provides diagnostics unavailable in any other wavelength range. In this presentation, we will discuss the important science questions that can be answered using spatially and spectrally resolved X-ray spectra.